Hugh M. Hulburt Memorial Lecturers

1988 Vern W. Weekman
Mobil Corporation

1989 Edward A. Mason
Amoco Corporation

1990 Warren R. Haug
Procter & Gamble Company

1991 Harold J. Corbett
Monsanto Company

1992 James E. Patton
Eastman Kodak Company

1993 L. Lewis Hegedus
W. R. Grace & Company

1994 Norman N. Li
AlliedSignal Inc.

1995 Kathleen C. Taylor
General Motors

1996 William J. White
Bell & Howell

1997 Thomas M. Sutliff
Baxter Healthcare International

1998 Stanley A. Gembicki
UOP

1999 William W. Graessley
Princeton University

2000 Stephen W. Drew
Merck & Company Inc.

2001 Patrick R. Gruber
Cargill Dow LLC

2002 Sang-Tae Kim
Lilly Research Laboratories

2003 Richard M. Gross
Dow Chemical Company

2004 Patricia T. Sparrell
ExxonMobil Biomedical Sciences Inc.

2005 Keith Grime
Procter & Gamble Company

2006 Lawrence B. Evans
Aspen Technologies

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McCormick

Robert R. McCormick School of Engineering and Applied Science
Department of Chemical and Biological Engineering
Northwestern University
Technological Institute, E136
2145 Sheridan Road
Evanston, Illinois 60208-3120

20th annual

Hugh M. Hulburt Memorial Lecture

in Chemical and Biological Engineering

Presented by

William F. Banholzer
Corporate Vice President
and Chief Technology Officer,
Dow Chemical Company

Thursday, April 26, 2007

McCormick

Robert R. McCormick School of Engineering and Applied Science
Northwestern University

Department of Chemical and Biological Engineering

Northwestern University
Robert R. McCormick School of Engineering and Applied Science
Department of Chemical and Biological Engineering

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and Chief Technology Officer,
Dow Chemical Company

Lessons Learned from 25 Years of Industrial Research *and* Selected Research Topics at Dow

Thursday, April 26, 2007
Refreshments 8:45 a.m.
Lecture 9 a.m.
Technological Institute, L361
2145 Sheridan Road
Evanston, Illinois
Lunch 1 p.m.
James L. Allen Center, Atrium
2169 Campus Drive
Evanston, Illinois

www.chem-biol-eng.northwestern.edu

Lessons Learned from 25 Years of Industrial Research *and* Selected Research Topics at Dow

Scientific research is both exciting and frustrating. It has the potential to improve the human condition and create wealth, but it can also end in futility. This talk draws on Banholzer's personal experience to offer perspective on subjects such as how to select research topics, how to apply the proper tools, and when to terminate programs. Specific examples include stealth materials for jet engines and the synthesis of diamond, including the variation of material properties as a function of isotopic composition.

The second portion of the talk focuses on selected research topics being explored at Dow. The strategy for selecting alternative feedstocks, commercially viable block copolymers produced from advanced catalysts, and agricultural products are highlighted.

William F. Banholzer is corporate vice president and chief technology officer of the Dow Chemical Company. He is a member of the Office of the Chief Executive and leads Dow's research and development activities across the globe.

Before joining Dow, Banholzer had a 22-year career with General Electric, starting as a staff chemical engineer in the company's corporate research and development laboratory and ending as vice president of global technology at GE Advanced Materials, responsible for worldwide technology and engineering.

In 2002 Banholzer was elected to the U.S. National Academy of Engineering. He serves on the NAE's Chemical Engineering Peer Committee and its Awards Committee and is one of 12 members of its Governing Council. He sits on the advisory boards for chemistry and chemical engineering at the University of Illinois at Urbana-Champaign and the University of California, Berkeley; is a member of the American Chemical Society and the American Institute of Chemical Engineers; and serves on the AIChE Awards Committee.

Banholzer earned a bachelor's degree in chemistry at Marquette University and master's and doctorate degrees in chemical engineering at the University of Illinois at Urbana-Champaign. He is a certified Six Sigma Master Black Belt, holds 14 patents, and has received more than 1,000 published citations for his work in the fields of engineering and chemistry.

Hugh M. Hulburt

A talented administrator and teacher, Professor Hugh M. Hulburt dedicated his professional career to the practice of chemistry and promoting the chemical engineering profession.

After receiving his PhD in 1942 he worked in various industry positions, becoming director of research and development at the Chemical Construction Corporation and later director of chemical engineering and director of physical research at American Cyanamid Company.

In 1964 Hulburt joined Northwestern and served as chairman of the chemical engineering department from 1965 to 1971, associate dean of the Graduate School from 1975 to 1980, and associate dean of the Technological Institute from 1980 to 1983. He chaired the committee to establish the Department of Biochemistry and Molecular Biology and fostered much closer ties between industry and the University and between science and engineering.

Hulburt was editor of *Industrial and Engineering Chemistry, Process Design, and Development* from its inception in 1962 until 1986. Under his editorship the journal became a highly respected publication in chemical engineering and industrial chemistry. He also served on the editorial board of the *Journal of Physical and Chemical Reference Data* and on the National Science Foundation's advisory panel for engineering, chemistry, and energetics. He was a fellow of the AIChE and was its Institute Lecturer in 1962.

The Hugh M. Hulburt Memorial Lecture was established to bring leaders in chemical engineering research and management to Northwestern to lecture and interact with students and faculty members and to foster closer collaboration between industry and academia in the education of future chemical engineers.